

**REMARKS**

Claims 1-26 are pending in the present case. In the Office Communication mailed January 8, 2009, the Examiner made a number of objections and rejections. For clarity, these are summarized below in the order in which they are addressed herein:

- I. Claims 1-14 and 16-26 are objected to because of alleged informalities, and Claims 4-15 and 19-26 are objected to under 37 CFR 1.75(c) because of allegedly improper multiple dependency;
- II. Claims 1-26 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention;
- III. Claim 15 stands rejected under 35 U.S.C. §101 because the claimed recitation of a use, without setting forth any steps involved in the process, allegedly results in an improper definition of a process;
- IV. Claims 1-4, and 7-14 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Angeletakis et al. (US Patent 6,593,395 B2); and
- V. Claims 16-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Angeletakis et al. (US Patent 6,593,395 B2).

Applicants note with appreciation that the Examiner has deemed Claims 5 and 6 as being allowable if rewritten in independent form including all of the limitations of the base claim and intervening claims. (Office Action paragraph 9).

- I. Claims 1-14 and 16-26 are objected to because of alleged informalities. In particular, the Examiner asserts that the term "characterized in that" should be corrected to "wherein." (Office Action, paragraph 1)

While not acquiescing to the Examiner's arguments, Applicants herein amend Claims 1-14 and 16-26 to replace the term "characterized in that" with the term "wherein."

Claims 4-15 and 19-26 are objected to under 37 CFR 1.75(c) because of alleged improper multiple dependency. (Office Action, paragraph 2).

While not acquiescing to the Examiner's arguments, Claims 4-15 and 19-26 are herein amended to such that no multiple dependent claim depends from another multiple dependent claim.

Applicants respectfully submit that all objections have been addressed.

**II.** Claims 1-26 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office Action, paragraph 4).

Regarding Claim 13, line 2, the phrase "or" allegedly renders the claim indefinite for being unclear as to whether the "it" refers to "initiator or a number of initiator" or "coinitiator or a number of coinitiators".

While not acquiescing to the Examiner's arguments, Claim 13 is herein amended to recite "wherein the dental material additionally contains an initiator or a number of initiators and the dental material optionally contains a coinitiator or a number of coinitiators."

Regarding Claim 15, the Examiner asserts that the claim does not set forth any steps involved in the method/process, and that it is thus unclear what method/process applicant is intending to encompass.

While not acquiescing to the Examiner's arguments, Claim 15 is amended herein to recite the steps of a) making available of a dental material manufactured in a process according to claim 16, and b) processing said dental a material of step a).

For the reasons recited above, Applicants submit that Claims satisfy the requirements of 35 U.S.C. §112, second paragraph, and respectfully request that these rejections be withdrawn.

**III.** Claim 15 stands rejected under 35 U.S.C. §101 because the claimed recitation of a use, without setting forth any steps involved in the process, allegedly results in an improper definition of a process. While not acquiescing to the Examiner's arguments, Claim 15 is amended herein to recite the steps of a) making available of a dental material manufactured in a process according to claim 16, and as b) processing said dental a material of step a). (Office Action, paragraph 4).

For the reasons recited above, Applicants submit that Claims satisfy the requirements of 35 U.S.C. §101 regarding definition of a process, and respectfully request that this rejection be withdrawn.

**The Claims Are Not Anticipated**

**IV.** Claims 1-4 and 7-14 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Angeletakis et al. (US Patent 6,593,395 B2, "Angeletakis"). (Office Action, paragraph 6). Applicants respectfully disagree. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP 2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d. 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As explained in more detail below, the reference cited does not set forth each and every element of the rejected claims.

The Examiner asserts that Angeletakis discloses a dental composite comprising resins and structure filler of ground particles, and further asserts that the "aggregated particles" of the instant claims read on the "weakly agglomerated particles" recited by Angeletakis. (Office Action paragraph 6, citing Col. 4 line 44 of Angeletakis).

Applicants respectfully disagree, and submit that the "aggregated particles" of the instant claims do **not** read on the "weakly agglomerated particles" of Angeletakis for at least the following reasons:

1. Angeletakis expressly teaches that the "weakly agglomerated particles" recited are not aggregated particles; and
2. The instant specification teaches different structures for "aggregates" and "agglomerates," and these teachings are *consistent* with the statements of Angeletakis.

The Examiner refers to col. 4, line 44 of Angeletakis for the teaching of "weakly agglomerated particles." However, a prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. MPEP 2141.02<sup>1</sup>. When the passage in col. 4 cited by the Examiner is considered in the context of the sentences that immediately precede it, it is clear that Angeletakis does *not* support the Examiner's assertion that the term "aggregated particles" of the instant claims reads on the "weakly agglomerated particles" of Angeletakis. At col. 4, lines 39 -45, Angeletakis states:

Nanofillers suitable for use in the present invention include powders with particles that are **not aggregated or substantially agglomerated** so as to minimize particle-particle interactions. The discrete particles have a mean particle size less than 100nm. By "discrete particles," there are included weakly agglomerated particles having an agglomerated average size less than 100 nm.

By teaching that suitable nanofillers *do not* include aggregated or substantially agglomerated particles, but that suitable nanofillers *do* include weakly agglomerated particles, Angeletakis makes a clear distinction between "aggregated" particles and "weakly agglomerated" particles. As one type of particle is **not** suitable for use in the Angeletakis invention and the other is suitable, Angeletakis also makes clear that these terms as used in this reference are not interchangeable, and do not read on each other.

These teachings of Angeletakis are consistent with teachings of the instant specification, which also teaches that aggregates and agglomerates have different meanings and refer to different structures.

As outlined on page 4, lines 6 to 17 of the specification, the term "aggregates" designates particles in which two or more primary particles are associated with one another by means of strong bonds such as, for example, sinter bridges. For example silicon dioxide filler obtained by flame pyrolysis has nanoscale primary particles which

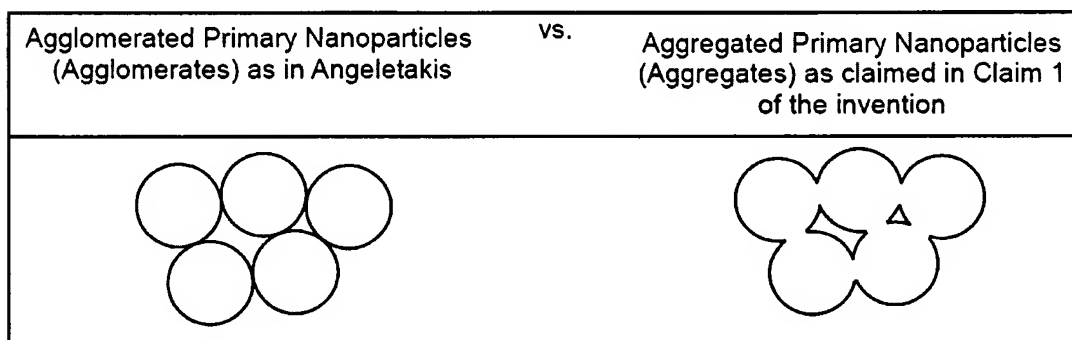
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<sup>1</sup> Citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

are held together in relatively large aggregates by strong aggregate forces, in particular sinter bonds (see also Angeletakis, col. 2, line 64 to col. 3, line 1).

By contrast "agglomerates" are particles in which multiple primary particles are associated by means of relatively weak bonds such as, for example, hydrogen bridges or dipole-dipole interactions. Angeletakis discusses such attractive interactions between silanol groups on particles as being the cause of undesirable agglomerative particle-particle interactions that preventing homogeneous dispersion of particles in resin, and that decreasing workability of composite pastes (col. 3, lines 5-15).

As a rule, in aggregates, the primary particles are actually connected to one another. In agglomerates, only weak, point-like connections exist (page 4, lines 9 to 17 of the specification), *i.e.* the contact surfaces are small, as illustrated below.



Even if the terms "aggregated" and "agglomerated" are deemed to be interchangeable (and Applicants maintain that they are not), the remaining elements of the claims must be considered (MPEP 2141.02.) Claim 1 further specifies a nanoscale filler wherein "at least 20 particle number% of the nanoparticles are aggregated particles." Angeletakis does not teach or suggest a composition comprising a nanoscale filler, wherein at least 20 particle number% of the nanoparticles are aggregated particles (or agglomerated particles).

For the reasons recited above, Applicants submit that Angeletakis fails to teach each and every feature of Claims 1-4 and 7-14, and therefore fails to anticipate these claims. Applicants respectfully request that this rejection be withdrawn.

**The Claims Are Not Obvious**

V. Claims 16-26 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Angeletakis et al. (US Patent 6,593,395 B2). (Office Action, paragraph 8). In particular, the Examiner asserts that The difference between the present claims and the disclosure of Angeletakis is the requirement of specific order for the contact. (Office Action, paragraph 8). Applicants respectfully disagree that the differences between Claims 16-26 and Angeletakis are limited to the order of the steps. Nonetheless, for business reasons and without acquiescing to the Examiner's arguments, and reserving the right to prosecute the original or similar claims in one or more future applications, Claims 16 is amended herein to recite providing at a2) "an at least partially aggregated or substantially agglomerated nanoscale filler."

As discussed above, Angeletakis does not recite the use of an aggregated or substantially agglomerated filler. Rather, Angeletakis states: " Nanofillers suitable for use in the present invention include powders with particles that are **not aggregated or substantially agglomerated.**"

As the Board of Patent Appeal and Interferences has confirmed, a proper obviousness determination requires that an Examiner make "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." See *In re Wada and Murphy*, Appeal 2007-3733, citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). Further, the necessary presence of all claim features is axiomatic, since the Supreme Court has long held that obviousness is a question of law based on underlying factual inquiries, including ... ascertaining the differences between *the claimed invention* and the prior art. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) (emphasis added). Indeed, Section 904 of the MPEP instructs Examiners to conduct an art search that covers "the invention *as described and claimed.*" (emphasis added). Lastly, Applicants respectfully direct attention to MPEP § 2143, the instructions of which buttress the conclusion that obviousness requires at least a suggestion of all of the features of a claim, since the Supreme Court in *KSR Int'l v. Teleflex Inc.* stated that "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (*quoting In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

In sum, it remains well-settled law that obviousness requires at least a suggestion of all of the features in a claim. *See In re Wada and Murphy, citing CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) and *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)).

While Applicants do not acquiesce that other elements necessary for establishing prima facie obviousness have been met, Applicants submit that Angeletakis does not teach or suggest all the features of Claims 16-26, and that Angeletakis specifically teaches away from a feature that is recited in Claim 16 – the use of aggregated or substantially agglomerated nanoscale fillers. Angeletaki therefore fails to establish prima facie obviousness of Claims 16-26 and Applicants respectfully request that rejection be withdrawn.

#### CONCLUSION

For the reasons set forth above, it is respectfully submitted that all grounds for objection and rejection have been addressed and Applicants' claims should be passed to allowance. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, Applicants encourages the Examiner to call the undersigned collect at (608) 218-6900.

Dated: April 8, 2009

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